



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/662,963

09/16/2003

Atsunori Kitazawa

Q77154

1129

23373

7590

09/08/2005

SUGHRUE MION, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
SUITE 800  
WASHINGTON, DC 20037

EXAMINER

LEE, SUSAN SHUK YIN

ART UNIT

PAPER NUMBER

2852

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/662,963

Applicant(s)

KITAZAWA ET AL.

Examiner

Susan S. Lee

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 June 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 9 is/are allowed.  
6) ☒ Claim(s) 1-4, 8 and 10-19 is/are rejected.  
7) ☒ Claim(s) 5-7 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

Upon reconsideration, the previous allowability of claims 1-4, 8, and 10-19 is hereby withdrawn in view of the following rejections.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 10-13, 15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimmura (6,603,934) in view of Hanada et al. (4,847,657).

Shimmura discloses an photosensitive body 1 or image carrier; a development unit 5 having a developing roller 51 or developer carrier, a liquid developing agent having a charging polarity, carrier liquid and toner; the surface of the developer carrier 51 is applied an electric field; forming a test image on the image carrier 1 (note column 4, lines 5-8); a toner layer thickness-detecting mechanism or a density detection means (note column 4, lines 9-22); and comparing the thickness of the toner layer with a reference value and varying a toner density of the toner liquid (note column 4, lines 17-22).

Shimmura differs from the instant invention by not disclosing forming the test image so that the adhesion amount of toner to the image carrier is substantially saturated relative to an increase of contrast potential.

Hanada et al. discloses depositing an increased amount of toner with an increase of the potential contrast of a photosensitive drum. Note column 5, lines 39-48.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Shimmura with that of Hanada et al. so that optimal developing can be obtained.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimmura (6,603,934), as modified by Hanada et al. (4,847,657) as applied to claims 1-4, 10-13, 15, and 19 above, and further in view of Oogi (5,974,276).

Shimmura, as modified by Hanada et al., differs from the instant invention by not disclosing informing means for giving a message when the toner density in liquid developer is determined to fall outside a predetermined range.

Oogi discloses a toner density adjustment is accomplished by increasing the toner density when the detected density value of a test pattern image is lower than a target value and decreasing the toner density when the detected density value of a test pattern image is higher than a target value. Toner replenishment in the developing device 4 is executed so to match the adjusted toner density. When an image density is not further adjusted after the above changes, then an indicator is displayed on the operation panel and a buzzer alarm is sounded. Note column 5, lines 11-29.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Shimmura in view of Hanada et al. with that of Oogi do that a warning can be given to an operator in order to maintain the operations of the image forming apparatus.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimmura (6,603,934), as modified by Hanada et al. (4,847,657) as applied to claims 1-4, 10-13, 15, and 19 above, and further in view of Suzuki (6,853,817).

Shimmura, as modified by Hanada et al., differs from the instant invention by not disclosing density means detecting a density of a patch image transferred from the image carrier to a transfer medium.

Suzuki discloses a density detecting mechanism for detecting information corresponding to a weight ratio of toner and carrier and controlling a toner supply amount for developing device 4. A patch sensor 13 functions as a density detecting means and is positioned to detect a density of a developed image (patch) transferred to a non-image area on the transfer sheet 5f. Note column 6, lines 22-39.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Shimmura in view of Hanada et al. with that of Suzuki so that more accurate developing with the correct toner amounts can be obtained.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimmura (6,603,934), as modified by Hanada et al. (4,847,657) as applied to claims 1-4, 10-13, 15, and 19 above, and further in view of Bresina et al. (5,258,810).

Shimmura, as modified by Hanada et al., differ from the instant invention by not disclosing a plurality of patch images are formed at varied contrast potentials.

Bresina et al. discloses a plurality of first color test patches formed by charging each with a different known grid voltage from a range of grid voltages and exposing the test patches. Note abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Shimmura in view of Hanada et al. with that of Bresina et al. so that calibration of the printer can be obtained as disclosed by Bresina et al.

Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimmura (6,603,934), as modified by Hanada et al. (4,847,657) as applied to claims 1-4, 10-13, 15, and 19 above, and further in view of Yoshida et al. (Japan, 8-289148).

Shimmura, as modified by Hanada et al., differ from the instant invention by not disclosing a storage means for storing image forming condition and forming the patch image under the image forming condition stored in the storage means.

Yoshida et al. discloses an image recording device with adjustments made during a maintenance mode and the values for different processes of the image recording device are stored as a density conversion table in a nonvolatile RAM of a control circuit 34. A toner patch is formed on a transfer material carrier 9 by using the information stored in the density conversion table. Note abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Shimmura in view of Hanada et al. with

Art Unit: 2852

that of Yoshida et al. so that high quality images can be obtained as disclosed by Yoshida et al.

***Allowable Subject Matter***


Claims 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 9 is allowed over the prior art of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan S. Lee whose telephone number is 571-272-2137. The examiner can normally be reached on Mon. - Fri., 10:30-8:00, Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Art Grimley can be reached on 571-272-2136 or 571-272-2800 (Ext. 52). The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Susan S. Lee  
Primary Examiner  
Art Unit 2852

sl